

The effects of stacking sequence layers of hybrid composite materials in energy absorption under the high velocity ballistic impact conditions: an experimental investigation

ABSTRACT

In the current study, the effects of stacking sequence layers of hybrid composite materials on ballistic energy absorption, which were fabricated from Kevlar, carbon, glass fibres, and resin have been experimentally investigated at the high velocity ballistic impact conditions. All the samples have equal mass, shape, and density, nevertheless, they have different stacking sequence layers. After running the ballistic test in the same conditions, the final velocities of the bullets showed that how much energy absorbed by the samples. The energy absorption of each sample through the ballistic impact has been calculated, accordingly, the decent ballistic impact resistance materials could be found by conducting the test. This paper can be further studied in order to characterize the material properties.

Keyword: Ballistic impact; Hybrid composite; Stacking sequence; Energy absorption